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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,577	10/31/2003	Tapesh Yadav	A15 DIV(14)	1118

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EXAMINER
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LE, HOA T

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 07/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/698,577

**Applicant(s)**

YADAV ET AL.

**Examiner**

H. T. Le

**Art Unit**

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 31 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16-52 is/are pending in the application.
- 4a) Of the above claim(s) 36,37 and 41-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-35 and 38-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

### **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Election/Restrictions***

2. This application contains claims 36, 37, and 41-52 drawn to an invention nonelected without traverse.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 16-25, 27, 28, and 30-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

In claim 16, “additional element” has no antecedent basis.

Claim 18 suffers the same deficiency of claim 16.

In claim 20, the process step of “creating a nanoscale powder” has no clear antecedent basis.

Claims 21-23 suffer the same deficiency of claim 20.

Claims 17-25 are deemed indefinite in view of their dependency upon claim 16.

In claims 27 and 28, “additional element” has no antecedent basis.

In claims 30-33, the process step of “creating a nanoscale powder” has no clear antecedent basis.

Claim 34 suffers the same deficiency of claim 27.

**5. Claims 16-37 and 38-40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.**

These claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims are now amended to include a process step of combining a dopant into the lattice of a metal compound. The specification as originally filed does not provide teaching as to how such combining step can be done. None of the commonly-owned patents cited by Applicant provide support for this step either for the reasons set forth in section 6 below.

**6. Claims 16-35 and 38-40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement as set forth in the last office action and further discussed below.**

3.1 Applicant argues that the process of “creating nanoscale particles” is taught in the commonly-owned U.S. Patent 5,788,738 (‘738 patent), particularly as detailed in examples 1 through 9. The method disclosed in the ‘739 patent is not the same as the claimed method. The ‘739 patent method involves making ultrafine (nanoscale) particles from a commercially available powder. The claimed invention, on the other hand, starts with a metal compound which may be or may not be in particulate form. In addition, the claimed process may

involve chemical reaction because the addition of a dopant, which step is absent in the teaching of the '739 patent. In addition, the claimed process results in particles comprising three-element or more, which cannot be seen how such multi-component particles can be made from the process taught in the '739 patent. Therefore, the '739 patent does not provide support for the production method of nanoscale powder as claimed.

3.2 Applicant further argues that the support for the claimed method is provided by the commonly owned U.S. patent 5,987,997, which the examiner believes is an incorrect patent number because the reference patent was issued to Roskam and titled "Ultrasound Flow Measurement Method". The Examiner assumes that Applicant intended to mean the US patent 5,984,997 ('997 patent), and the examiner's reply to this argument is based on this assumption. Similarly, to the '739 patent, the '997 patent discloses method of making nanoscale powder from a powder, and such method involves neither dopant nor requires formation of at least three elements in the resulting powder. Therefore, the '997 patent does not provide support for the production method of nanoscale powder as claimed.

***Claim Rejections - 35 USC § 102***

7. Claims 16-35 and 38-40 are rejected under 35 U.S.C. 102(b) as being anticipated by the Schmidt patent (US 5,590,387); the Lawandy patent (US 5,882,779); and the Hampden-Smith patent (US 6,180,029) as set forth in the last office action and further discussed below.

Examiner's Note: Because the specification does not provide description as to how a dopant can be "combined into the lattice" of the metal compound, for purpose of art

rejection, the examiner interprets this process step broadly as a combination of the dopant to a compound by any means including surface-modifying, treating, coating, etc....

8. The Schmidt patent ('387):

8.1 Applicant argues that "'387 does not teach or offer any motivations for combining dopant into the lattice of a metal compound comprising compositions of matter as called for in independent claims 16 and 26." As stated in the last office action, '387 teaches metal-containing nanoparticles being surface modified by a surface-modifying agent. Dopant is a small quantity being added to a compound to change the property of the compound. Thus, the surface-modifying agent constitutes dopant because it changes the surface properties of the nanoparticles. Thus, it is necessarily inherent that the dopant (i.e. surface modifying agent) is combined into the lattice of the metal particles (see examiner's note above), especially after the modified particles were subject to sintering.

9. The Lawandy patent ('779)

Applicant argues that '779 teaches semiconductor cores being coated with certain transition metals and thus does not provide and the coating processes do not teach or offer any motivations for combining elements into the lattice of the metal compound. The coating material constitutes a dopant, and for the dopant to form a coating on the semiconductor core, it is expected that the dopant "combined into the lattice" of the semiconductor core. Note that the specification provides no description as to the combination step; therefore, this step can be interpreted broadly as combination of the dopant into a material.

10. The Hampden-Smith patent ('029)

Art Unit: 1773

Applicant argues the present application has a priority date predates the '029 patent. As discussed in the rejection under 35 USC 112, first paragraph above, the parent applications do not provide support of the claimed invention. Therefore, the present application is not entitled to the filing date of any of its parent applications. The effective filing date for the present application is therefore its actual filing date. Accordingly, the '028 patent is a valid prior art against the claimed invention. Because applicant does not argue to the merit of the rejection, the examiner assumes that applicant agrees with the examiner's position on the '029 patent.

### ***Response to Arguments***

11. Applicant's arguments filed March 31, 2006 have been fully considered but they are not persuasive for the reasons set forth in sections 6-10 above. However, Applicant's arguments with regard to the Nass and Moy patents are persuasive. The rejections based on the Nass and the Moy patents have been withdrawn.

12. In view of the terminal disclaimer filed March 31, 2006, the double patenting rejection has been withdrawn.

### ***Conclusion***

13. Applicant's arguments filed March 31, 2006 have been fully considered but they are not persuasive for the reasons set forth in sections 6-10 above.

14. Applicant's amendment necessitated the new ground(s) of rejection as presented in sections 3-5 in this Office action.

15. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. T. Le whose telephone number is 571-272-1511. The examiner can normally be reached on 10:00 a.m. to 6:30 p.m., Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 1773

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'H. T. Le', is positioned above the printed name and title.

H. T. Le  
Primary Examiner  
Art Unit 1773

July 8, 2006